

**Chicken Creek Gypsum Mine
Geologic Investigation****Introduction**

A geologic investigation will be completed at the mine site, including the east and west mine areas, in order to:

- Determine areas for economic development of the mine
- Project reserves of minable gypsum
- Determine the potential pit slope stability of the rock

This information will be used to complete the mine plan for ongoing development of the deposit, including location of future pit development, planned pit wall slope angle, and future reclamation.

The work will be completed in two phases.

Phase 1

The goal of Phase 1 of the work is to prepare a geologic map and preliminary cross sections. Field mapping will be conducted in order to identify:

- Geologic formations and major structures
- Bedding type and thickness
- Bedding plane orientation
- Predominant fracture and joint set orientations

Stereographic analysis of the fracture orientation will be completed, as well as preliminary geologic cross sections perpendicular to the planned pit slopes. Cross sections will be projected beyond the planned pit boundaries.

In addition to the basic geologic field mapping to be performed at both the east and west mines, particular attention will be focused on the slope failure within the west mine. A hydrogeological study will also be completed on the seep that is flowing from the toe of the slope failure.

During the geologic field mapping, locations will be determined for exploratory borings to be completed during Phase 2.

Phase 2

During Phase 2, a series of exploratory borings will be drilled using a track or skid mounted drilling rig with a diamond bit core sampler. The location and number of borings to be completed will be determined during the Phase 1 geologic mapping. It is estimated that a minimum of three borings will be completed in the area of the east mine, and four to five borings will be completed in the area of the west mine.

The borings are intended to collect the following information:

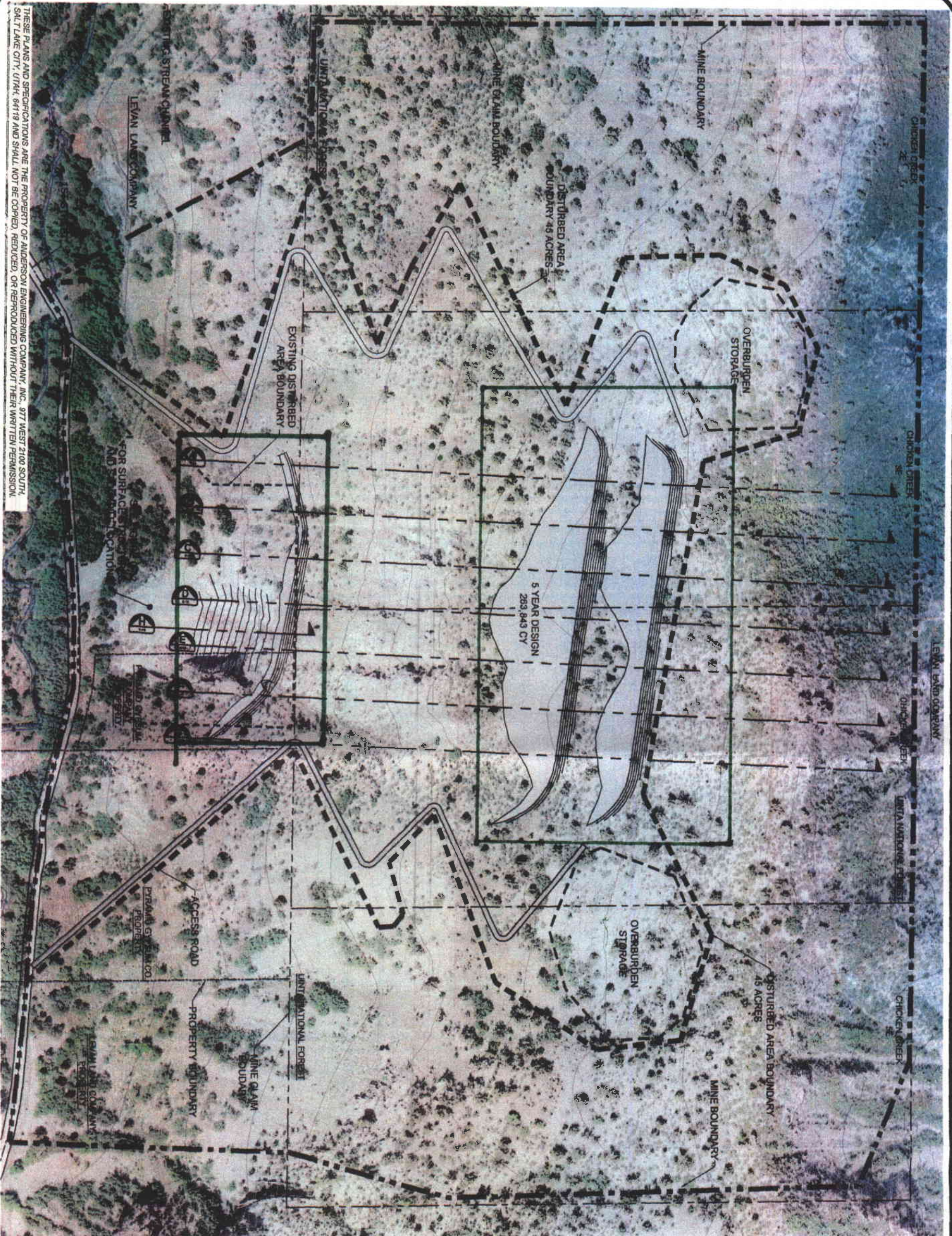
- Geologic formations and major structures
- Bedding type and thickness
- Bedding plane orientation
- Predominant fracture and joint set orientations
- Verification of the cross sections which were projected during the Phase 1 work

Data from the borings in the west mine area will also be used to identify and map the bedding, joint, or fracture plane causing the slope failure in the west pit.

The information will be used to determine the safe pit wall slopes for both the east and west mines and the planned expansion of both mine areas.

Rock cores will be collected for geotechnical laboratory testing, including rock strength, and shear strength determination for natural fractures or bedding planes.

The geologic maps, cross sections, and laboratory data will be used to guide the development of the mine plan and to determine the benches and high wall slopes to be excavated to maintain slope stability and mine safety.



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General Notes

- BENCHES CONSIST OF 20 FT WIDE BENCH AND 40 FT HIGHWALL. HIGHWALL SLOPES ARE 0.5:1
- NEW CONTOURS 10 FT MINOR AND 50 FT MAJOR
- EXISTING CONTOURS 20 FT MINOR AND 100 FT MAJOR
- MINE BENCH



No.	Revision/Issue	Date

SUNROC

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DRAWN BY: GAN
ENGINEER:
APPROVED:

**LEVAN CHICKEN
CREEK SYR DESIGN
PLAN VIEW**

EAST MINE
T14S R1E SECTION 34
LEVAN, UTAH

Project: 200000
Scale: 01-JUN-07
Sheet: AS-BROWN
Figure: C-2



General Notes



No.	Revision / Issue	Date

SUNROC

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DRAWN BY: GAN
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APPROVED:

**LEVAN CHICKEN
CREEK WEST MINE
OVERVIEW**
T155 R1E SECTION 33
LEVAN, UTAH

Project: XXXXXX
Date: 01-JUN-07
Scale: AS SHOWN
Figure:
C-5

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